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- 1 A method for producing a CsX:Eu stimuable phosphor, wherein X represents a halide
2 selected from the group consisting of Br, Cl and combinations thereof, comprising the
3 steps of :
4 - mixing CsX with an Europium compound selected from the group consisting of
5 EuX'₂ EuX'₃ and EuOX', X' being selected from the group consisting of F, Cl, Br, I and
6 combinations thereof,
7 - heating said mixture at a temperature above 450 °C
8 - cooling said mixture, and
9 - optionally recovering the CsX:Eu phosphor..
10
11 2. A method according to claim 1, wherein between 10⁻³ and 5 mol % of said Europium
12 compound is mixed with said CsX.
13
14 3. A method according to claim 1, wherein between 10⁻¹ and 3 mol % of said Europium
15 compound is mixed with said CsX.
16
17 4. A method according to claim 1, wherein X' is a member selected from the group
18 consisting of Cl and Br.
19
20 5. A method according to claim 2, wherein X' is a member selected from the group
21 consisting of Cl and Br.
22
23 6. A method according to claim 3, wherein X' is a member selected from the group
24 consisting of Cl and Br.
25
26 7. A binderless phosphor screen containing a CsX:Eu phosphor prepared according to claim
27 1.
28
29 8. A binderless phosphor screen containing a CsX:Eu phosphor prepared according to claim
30 2.
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32 9. A binderless phosphor screen containing a CsX:Eu phosphor prepared according to claim
33 3.

1 10. A binderless phosphor screen containing a CsX:Eu phosphor prepared according to claim
2 4.

1 11. A binderless phosphor screen containing a CsX:Eu phosphor prepared according to claim
2 5.

1 12. A binderless phosphor screen containing a CsX:Eu phosphor prepared according to claim
2 6.

1 13. A method for producing a binderless phosphor screen comprising the steps of
2 - producing a CsX:Eu phosphor with the method of claim 1 and
3 - depositing said phosphor on a substrate by a method selected from the group
4 consisting of physical vapor deposition, chemical vapor deposition or an atomization
5 technique.

1 14. A method for manufacturing a binderless phosphor screen on a substrate containing a
2 CsX:Eu stimuable phosphor, wherein X represents a halide selected from the group
3 consisting of Br, Cl and combinations thereof comprising the steps of:
4 - bringing heatable multiple containers of CsX and an Europium compound selected
5 from the group consisting of EuX'_2 , EuX'_3 and EuOX' , X' being selected from the group
6 consisting of F, Cl, Br, I and combinations thereof together with the substrate in a
7 deposition chamber that is evacuated to at least 10^{-4} mbar; and
8 - depositing, by a method selected from the group consisting of physical vapor
9 deposition, chemical vapor deposition or atomization technique, both said CsX and said
10 Europium compound on a substrate in such a ratio that on said substrate a CsX phosphor,
11 doped with between 10^{-3} and 5 mol % of Europium, is formed.

1 15. A method for manufacturing a phosphor screen containing of a CsX:Eu stimuable
2 phosphor, wherein X represents a halide selected from the group consisting of Br and Cl
3 comprising the steps of:
4 - mixing CsX with between 10^{-3} and 5 mol % of an Europium compound selected
5 from the group consisting of EuX'_2 , EuX'_3 and EuOX' , X' being selected from the group
6 consisting of F, Cl, Br, I and combinations thereof,

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6

7 - bringing said mixture in a container and bringing this container together with the
8 substrate in a deposition chamber that is evacuated to at least 10^{-4} mbar and
9 - depositing said mixture on a substrate by a method selected from the group
10 consisting of physical vapor deposition, chemical vapor deposition or atomization
11 technique.

1 16. A method for recording and reproducing images of objects made by high energy
2 radiation comprising:

3 - exposing a panel with X-ray radiation, said panel comprising a CsX:Eu stimuable
4 phosphor, wherein X represents a halide selected from the group consisting of Br, Cl and
5 combinations thereof, including between 10^{-3} and 5 mol% of an Europium dopant, said
6 dopant originating from an Europium compound selected from the group consisting of
7 EuX'_2 , EuX'_3 and EuOX' , X' being selected from the group consisting of F, Cl, Br, I and
8 combinations thereof,

9 - stimulating said panel with radiation having a wavelength between 500 nm and 1100
10 nm thereby releasing stimulated radiation and

11 - collecting said stimulated radiation.

1 17. A phosphor of the formula $\text{CsBr}_a\text{Cl}_b\text{:Eu}$ where $a + b = 1$, and a ranges from about 0.99 to
2 about 0.8 and b ranges from about 0.01 to about 0.2.

1 18. The phosphor of claim 14, wherein a ranges from about 0.99 to about 0.95 and b ranges
2 from about 0.01 to about 0.05.

1 19. The phosphor of either claim 14 or 15, wherein the phosphor is an x-ray storage
2 phosphor.

1 20. A CsX:Eu compound prepared according to either of the methods of claims 1, 2, 3, 4, 5
2 or 6.

1 21. A phosphor characterised by the formula CsX:Eu , wherein X is selected from the group
2 consisting of Br, Cl and combinations thereof and said phosphor exhibiting, when
3 excited with radiation of 254 nm, a blue photoluminescence and a red
4 photoluminescence wherein said blue photoluminescence has an power (Watt) at least
5 100 times higher than said red photoluminescence.

- 1 22. The phosphor of claim 21, wherein X is Br.
- 1 23. A binderless phosphor screen comprising a CsX:Eu stimuable phosphor according to
2 claim 21.
- 1 24. A binderless phosphor screen comprising a CsX:Eu stimuable phosphor, according to
2 claim 22.

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